REMARKS/ARGUMENTS

The Examiner is thanked for her review of the pending application and also the phone interview of April 9, 2007.

Claims 1-17, 19-24 remain in this application. Claims 1, 5, 8 have been amended. Claims 25-27 have been added. No new matter has been added.

In the Office Action dated January 18, 2007, the Examiner has rejected Claims 1-4, 9-10, 15, 19-20 under 35 U.S.C. 101 because it does not recite subject matter within one of the statutory classes. Regarding this rejection the Examiner has stated that "Claim 1 recites a series of engines (i.e. econometric engine, financial model engine, and promotional engine). Engines are portions of programs, and thus the body of claim 1 is construed as software per se. Claims 2-4, 9-10, 15 and 19-20 depend from claim 1 and therefore have the same deficiencies. Computer programs and software are merely a set of instructions capable of being executed by a computer. Without specific language stating that a computer or computer processor is actively executing the computer program/software, computer programs and software are not considered to be statutory processes or machines. Therefore, there must be some functional act performed by a computer or computer element on the software/computer program to impart statutory subject matter. Therefore, it is respectfully submitted that claims 1-4, 9-10, 15, and 19-20 are directed towards non-statutory subject matter."

The Examiner has also rejected Claims 1-4, 9-10, 15, and 19-20 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding this rejected the Examiner has stated that "Claim 1 recites in the preamble an apparatus, while the body of the claim recites a series of engines. It is unclear how a collection of engines, which are portions of computer programs, would amount to an apparatus. Therefore, it appears that the body of the claim does not match the limitations set forth in the preamble. Clarification is required."

Base Claim 1 has been amended and now recites a "computerized system configured to create a promotional event calendar, useful in association with at least one store", and hence is now compliant with 35 U.S.C. 101 and 35 U.S.C. 112. Support for the computerized system can be found on figure 7A-7B and pages 117-119.

The Examiner has also rejected Claims 1-24 under 35 U.S.C. 103(a) as being unpatentable over Cunningham et al. (US 6,029,139) in view of Dulaney et al. (US 6,341,269).

Regarding Claim 1 the Examiner has stated that "Cunningham et al. teaches an apparatus for creating a promotional event calendar, useful in association with at least one store, the apparatus comprising: an econometric engine for modeling sales as a function of price to create a sales model…a financial model engine for modeling costs to create a cost model…a promotional engine coupled to the econometric engine, and financial model engine to receive input from the econometric engine and financial model engine, wherein the promotional engine analyzes a plurality of offers, a plurality of promotional events, conditions from at least one manufacturer, and constraints to optimally match offers with promotional events to create a promotional event calendar subject to conditions from the at least one store…wherein an engine uses the output of the other engines to analyze and optimize promotional options to match offers and events (i.e. prices with displays, for example) This creates a schedule of events for future promotions…However, while Cunningham et al. discloses receiving and analyzing constraints from a user, Cunningham et al. does not expressly disclose receiving and analyzing constraints from the at least one store wherein the constraints include a linear constraint and a nonlinear constraint. Dulaney et al. discloses receiving and analyzing constraints the at least one store…and promotion analysis (See column 18, lines 26-52). However, Dulaney et al. does not expressly disclose that the constraints include a linear constraint and a non-linear constraint. Both Cunningham et al. and Dulaney et al. discloses using constrained optimization to make decisions concerning a store and promotions. Cunningham et al. discloses interfacing with a user set goals and constraints and elicit promotional cost information for the system. Dulaney et al. specifically discloses constraints related to the store, such as capacity

constraints concerning shelves and facings. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the user input constraints of Cunningham et al. be constraints related to the store in order to more efficiently select the best promotions for the store based on quantifiable inputs by the user, such as a price, volume, or profit, by using constraints concerning the store that will affect the minimization of cost. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation. Further, as stated above, both Cunningham et al. and Dulaney et al. discloses using constrained optimization. It is old and well known in operations research that constraints are used to specify restrictions on values of variables and would take the form of linear or non-linear equalities or inequalities in order to best represent the situations that limit the values of variables in the constrained optimization problem. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use linear and non-linear constraints in order to more accurately optimize promotional options by matching offers and events based on accurately represented restrictions occurring at the store."

Base Claim 1 now recites "an econometric engine for modeling sales as a function of price to create a sales model, wherein the econometric engine includes an imputed variable generator for imputing base price variable and for imputing promotional variable, and wherein the sales model includes the imputed base price variable and the imputed promotional variable" (emphasis added). Support for "imputed variable generator" can be found in figure 3 and lines 6-20 of page 13. Support for "imputed base price variable and imputed promotional variable" can be found in step 1033 of figure 10, lines 1-4 of page 30, step 1903 of figure 19A, lines 15-17 of page 8, and lines 9-17 of page 53. Hence, Claim 1 is now allowable over Cunningham et al. (US 6,029,139) and Dulaney et al. (US 6,341,269), since none of the two cited references teach this limitation, alone or in combination.

Regarding Claim 2, the Examiner has stated that "Cunningham et al. discloses wherein the promotional engine further comprises a temporary price reduction optimizing engine for optimizing temporary price reduction prices after the promotional events and offers have been selected."

Regarding Claim 3, the Examiner has stated that "Cunningham et al. teaches a promotional engine and outputting the optimized selection, as well as a client/personal computer…However, Cunningham et al. does not expressly discloses, nor does Dulaney et al., a support tool per se connected to the promotional engine that receives the promotional event calendar from the promotional engine and provides a user interface with the promotional event calendar to a client. Cunningham discloses a system with client/server architecture and models that optimize promotional planning to create the output of promotional events and offers. Using a user interface to more efficiently display output to a user (or client) of a system is old and well known in the computer arts. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to display the output and optimized results to the user of the system in order to more efficiently communicate the results to the user for whom the analysis was performed."

Regarding Claim 4, the Examiner has stated that "Cunningham et al. discloses wherein the promotional engine calculates the value of offers and the value of promotional events by using the financial model and sales model and selects combinations of the offers and the promotional events."

Claims 2-4 are dependent on base Claim 1 and hence are also allowable over Cunningham '139 and Dulaney '269, and hence are also allowable for at least the same reasons discussed above for Claim 1.

Regarding Claim 5, the Examiner has stated that "Cunningham et al. discloses a computer-implemented method for creating a promotional event calendar, comprising: creating a sales model…creating a cost model…determining conditions from at least one manufacturer… determining user input constraints…determining the value of offers using the sales model and cost model…determining the value of promotional events using the sales model and cost model…and selecting combinations of the offers and promotional events based on the determined values to create a promotional event calendar subject to the conditions from the at least one manufacturer and constraints from the user…However, while Cunningham et al. discloses receiving and analyzing constraints from a user, Cunningham et al. does not expressly disclose receiving and analyzing

constraints from the at least one store wherein the constraints include a linear constraint and a nonlinear constraint. Dulaney et al. discloses receiving and analyzing constraints the at least one store…However, Dulaney et al. does not expressly disclose that the constraints include a linear constraint and a nonlinear constraint. Both Cunningham et al. and Dulaney et al. discloses using constrained optimization to make decisions concerning a store and promotions. Cunningham et al. discloses interfacing with a user to set goals and constraints and elicit promotional cost information for the system. Dulaney et al. specifically discloses constraints related to the store, such as capacity constraints concerning shelves and facings. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the user input constraints of Cunningham et al. be constraints related to the store in order to more efficiently select the best promotions for the store based on quantifiable inputs by the user, such as price, volume, or profit, by using constraints concerning the store that will affect the minimization of cost. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation. Further, as stated above, both Cunningham et al. and Dulaney et al. discloses using constrained optimization. It is old and well known in operations research that constraints are used to specify restrictions on values of variables and would take the form of linear or non-linear equalities or inequalities in order to best represent the situations that limit the values of variables in the constrained optimization problem. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use linear and non-linear constraints in order to more accurately optimize promotional options by matching offers and events based on accurately represented restrictions occurring at the store."

Amended independent Claim 5 now recites "creating a sales model and wherein the sales model includes an imputed base price variable and an imputed promotional variable" (emphasis added) and is also allowable for the same reasons discussed above for Claim 1.

Regarding Claim 6, the Examiner has stated that "Cunningham et al. wherein the creating of the sales model comprises: creating a plurality of demand groups, wherein each demand group is a set of at least one product and wherein at least one of the demand groups is a set of at least two substitutable products (See column 2, lines 25-35, column 4, line 61-column 5, lines 8, column 6,

lines 22-40 and 50-62, which discusses demand groups wherein a demand group is one product or more than one product, such as segment or brand family. A segment is a product type, such as tea bags, wherein teabags of different manufacturers would be substitutes), wherein the creation of the plurality of demand groups includes error detection and correction based on attributes of the plurality of demand groups (See figure 3, column 6, lines 35-46, and column 11, 15-30, wherein when the demand group is formed, data is aggregated and the data is checked for missing values (ie errors), which when found is corrected); creating a sales model for each demand group…and creating a market share model for each product in each demand group."

Regarding Claim 7, the Examiner has stated that "Cunningham et al. discloses the step of estimating net profit from the selected combination of offers and promotional events using the sales model and cost model (See column 5, lines 30-56, column 6, lines 1-22, wherein the net profit is estimated by using optimization, the sales and cost models)."

Claims 6, 7 both dependent on base Claim 5 and hence are also allowable over Cunningham '139 and Dulaney '269 for at least the same reasons independent Claims 1 and 5 are allowable.

Regarding Claim 8, the Examiner has stated that "Claim 8 recites equivalent limitations to claims 5-7 above and is therefore rejected using the same art and rationale applied above." Base Claim 8 has also been amended to recite "creating a sales model for each demand group and wherein the sales model for each demand group includes an imputed base price variable and an imputed promotional variable" (emphasis added), and hence is allowable over Cunningham '139 and Dulaney '269 for at least the same reasons discussed above for Claim 1.

Regarding Claim 9, the Examiner has stated that "Cunningham et al. discloses determining user input constraints (See column 2, lines 1-5 and 30-45, which discuss user input constraints). However, while Cunningham et al. discloses receiving and analyzing constraints from a user and using linear programming, Cunningham et al. does not expressly disclose receiving and analyzing constraints the at least one store. Dulaney et al. discloses store constraints, where the store

constraints include display space capacity…Both Cunningham et al. and Dulaney et al. discloses using constrained optimization (linear programming) to make decisions concerning a store and promotions. Cunningham et al. discloses interfacing with a user to set goals and constraints and elicit promotional cost information for the system. Dulaney et al. specifically discloses constraints related to the store, such as capacity constraints concerning shelves and facings. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the user input constraints of Cunningham et al. be constraints related to the store, such as display space, in order to more efficiently select the best promotions for the store based on quantifiable inputs by the user, such as price, volume, or profit, by using constraints concerning the store that will affect the minimization of cost."

Regarding Claim 10, the Examiner has stated that "Cunningham et al. discloses determining user input constraints (See column 2, lines 1-5 and 30-45, which discuss user input constraints). However, while Cunningham et al. discloses receiving and analyzing constraints from a user and using linear programming, Cunningham et al. does not expressly disclose receiving and analyzing constraints the at least one store. Dulaney et al. discloses store constraints, where the store constraints includes at least one of an event type (See column 18, lines 28-53, which discusses promotions/seasonal events). Both Cunningham et al. and Dulaney et al. discloses using constrained optimization (linear programming) to make decisions concerning a store and promotions. Cunningham et al. discloses interfacing with a user to set goals and constraints and elicit promotional cost information for the system. Dulaney et al. specifically discloses constraints related to the store, such as capacity constraints concerning shelves and facings. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the user input constraints of Cunningham et al. be constraints related to the store, such as event types, in order to more efficiently select the best promotions for the store based on quantifiable inputs by the user, such as price, volume, or profit, by using constraints concerning the store that will affect the minimization of cost. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation."

Regarding Claims 11-12 and 13-14, the Examiner has stated that they "recite equivalent limitations to claims 9-10, respectively, and are therefore rejected using the same art and rationale applied above."

Regarding Claim 15, the Examiner has stated that "Cunningham teaches wherein the matching of offers with promotional events involves solving an optimization problem…However, Cunningham et al. does not expressly disclose that the optimization problem is specifically an integer problem with the linear constraint and the nonlinear constraint. Dulaney et al. discloses an integer problem as a type of constrained optimization (See column 16, lines 1-17). Cunningham et al. discloses using optimization to find the best promotions based on volume, price, profit, etc. goals. Using integer programming when some variables of the problem need to be integer values is old and well-known in operations research, as discussed by Dulaney et al. Cunningham et al. discloses the variable of volume, for example, where the number of products must be an integer value. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an integer problem in the optimization performed by Cunningham et al. in order to more efficiently select the best promotions at the least cost in a problem involving inputs that have integer values. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation. Further, as stated above, both Cunningham et al. and Dulaney et al. discloses using constrained optimization. It is old and well known in operations research that constraints are used to specify restrictions on values of variables and would take the form of linear or non-linear equalities or inequalities in order to best represent the situations that limit the values of variables in the constrained optimization problem. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use linear and non-linear constraints in order to more accurately optimize promotional options by matching offers and events based on accurately represented restrictions occurring at the store."

Regarding Claims 16 and 17, the Examiner has stated that they "recite equivalent limitations to claim 15 and are therefore rejected using the same art and rationale applied above."

Regarding Claims 19, 21, and 23, the Examiner has stated that "Cunningham et al. teaches wherein the conditions from the at least one manufacturer include providing at least one of a promotional event and specific amount of promotion."

Regarding Claims 20, 22, and 24, the Examiner has stated that "Cunningham et al. teaches wherein the conditions from the at least one manufacturer include if a manufacturer is providing goods or product for a competitor…However, neither Cunningham et al. or Dulaney et al. disclose that the manufacturer conditions include not providing a promotional event for a competitor's product. Cunningham et al. discloses taking into consideration actions of competitor manufacturers when planning a promotion. When there is no competitor action, it would not be considered and thus not affect the planning of Cunningham et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to consider a manufacturer not providing a promotional event for a competitor's product in the planning of Cunningham et al. in order to more efficiently select the best promotions for the store based on quantifiable inputs by the user by using considering all variables that will affect the minimization of cost."

Dependent Claims 9-17 and 19-24 are also allowable over the cited references Cunningham '139 and Dulaney '269 for at least the same reasons their respective base Claims 1, 5, 8 are allowable.

New Claims 25 and 26 have been added and recite "wherein the imputed base price variable is a function of initial base prices" and "wherein the initial base prices are averages of non-promoted prices", respectively. Support can be found on lines 5-8 of page 32 and on lines 5-6 of page 33.

Since none of the cited references teach or suggest the respective limitations, Claims 25, 26 are both allowable over Cunningham '139 and Dulaney '269.

New Claim 27 has also been added and recites "wherein the sales model created by the econometric engine includes Bayesian Shrinkage modeling." Support can be found on lines 15-20 of page 61.

Since none of the cited references teach or suggest the limitations of Claim 27, Claim 27 is also allowable over Cunningham '139 and Dulaney '269.

In sum, base Claims 1, 5, 8 have been amended and are believed to be allowable. Dependent Claims 2-4, 6, 7, 9-17, 19-24 which depend therefrom are also believed to be allowable as being dependent from their respective patentable parent Claims 1, 5, 8 for at least the same reasons. Hence, Examiner's rejection of dependent Claims 2-4, 6, 7, 9-17, 19-24 are rendered moot in view of the amendment to independent Claims 1, 5, 8. New Claims 25-27 have been added and are also believed to be allowable.

Applicants believe that all pending Claims 1-17, 19-27 are now allowable over the cited art and are also in allowable form and respectfully request a Notice of Allowance for this application from the Examiner. The commissioner is authorized to charge any additional fees that may be due to our Deposit Account No. 50-2766 (Order No. DEMIP006). Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at telephone number 925-570-8198.

LAW OFFICES OF KANG S. LIM
PMB 436
3494 Camino Tassajara Road
Danville, CA 94506
Voice: (925) 570 8198
Facsimile: (925) 736 3974

Respectfully submitted,

/Kang S. Lim/

Kang S. Lim
Attorney for Applicant(s)
Reg. No. 37,491

CUSTOMER NO. 36088